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Paliphora bicolorata sp. nov. from the Brazilian Atlantic Forest

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Abstract—A new species, *Paliphora bicolorata,* collected from decaying leaves of an unidentified plant, is described and illustrated. It is characterized by bicolored conidiophores with 3–4 dark reddish-brown distal cells and golden brown to brown lower cells and cylindrical-fusiform, 1-septate, hyaline conidia. A key to *Paliphora* species is provided.

Key words—neotropic, asexual fungi, systematics

Introduction

The genus *Paliphora* Sivan. & B. Sutton was introduced by Sivanesan & Sutton (1985) with *P. aurea* Sivan. & B. Sutton as type species; five more species were added by Kuthubutheen (1987), Alcorn (1996), Gusmão et al. (2008), and Goh et al. (2014). *Paliphora* is distinguished by distinct, unbranched, multiseptate, setiform conidiophores that form hispid golden brown to brown colonies and polytretic, integrated, determinate, intercalary (rarely terminal) conidiogenous cells with tretic loci (situated immediately below transverse septa) producing successive, cylindrical or somewhat subfusiform to subacerose, hyaline,

unicellular or euseptate conidia that accumulate in slimy masses around the conidiogenous cells. The production of successive conidia in dense mucous masses or packets through tretic loci is peculiar among hyphomycetes and serves as the main diagnostic character of *Paliphora* (Alcorn. 1996, Gusmão et al. 2008, Sivanesan & Sutton 1985).

During a mycological survey of microfungi associated with leaf litter in a Brazilian Atlantic forest, we collected a conspicuous fungus, described here as a new *Paliphora* species.

Materials & methods

Individual collections were placed in plastic bags, taken to the laboratory, and treated according to Castañeda-Ruiz et al. (2016). Mounts were prepared in polyvinyl alcohol-glycerol (8 g PVA in 100 ml of water, plus 5 ml of glycerol) and lactofuchsin (0.1 g acid fuchsin, 100 ml 85% lactic acid following Carmichael (1955) or in lactic acid (90%) and measurements were made at a magnification of ×1000 under a Nikon Eclipse Ni-U microscope with bright field optics; photomicrographs were obtained using DIC optics with a Nikon DS-Fi2 camera. The holotype was deposited in the Herbarium of Universidade Federal de Pernambuco, Recife, Brazil (URM).

Taxonomy

Paliphora bicolorata Malosso, P.M.O. Costa & R.F. Castañeda, **sp. nov.** Fig. 1

MycoBank MB 823671

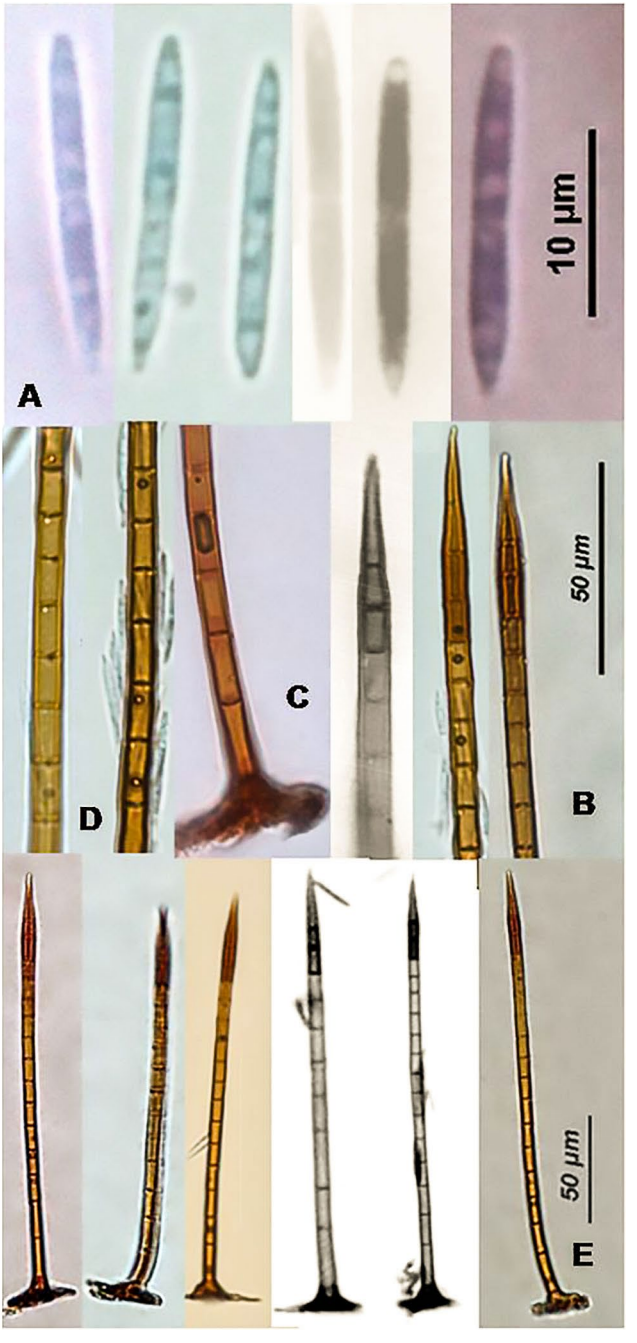
Differs from *Paliphora intermedia* by its bicolored conidiophores.

Type: Brazil, Pernambuco, Igarassú, RPPN Refúgio Ecológico Charles Darwin, 7°48′S 34°57′W, on decaying leaves of an unidentified plant, 12.V.2017, coll. P.M.O. Costa (**Holotype**, URM 90132).

Etymology: Latin, *bicolorata*, two-colored, referred to the conidiophores.

Colonies on the natural substrate effuse, hispid, reddish-brown to brown. Mycelium superficial and immersed, composed of septate, branched, brown, smooth-walled hyphae, 1.5–2.5 µm diam. Conidiophores macronematous, setiform, unbranched, erect, straight, cylindrical below, acuminate at the apex, ≤17-septate, golden brown below, reddish-dark brown at the four distal cells, smooth below, verruculose near the apex, 170–220 × 5–6 µm, slightly lobed at the base, 9–13 µm wide. Conidiogenous cells polytretic, intercalary, determinate, incorporated, brown, 7–10 × 4–5 µm. Conidia solitary,

Fig. 1. *Paliphora bicolorata* (ex holotype, URM 90132). A. Conidia; B. Conidiogenous cells and dark reddish-brown distal cell; C. Conidiophore basal cell; D. Intercalary conidiogenous cells with tretic loci and conidia; E. Conidiophores, conidiogenous cells, and conidia. B–D share the same scale.


A
10 µm
B
C
D
50 µm
E
50 µm

pleurogenous, cylindrical to broad subacerose, attenuate at the base, obtuse at the apex, straight, 1-euseptate, hyaline, smooth, 18–23 × 2 µm, accumulating in white, slimy masses, more or less near the conidiophores central part.

Notes: Among the six previously described *Paliphora* species, only *P. intermedia* Alcorn and *P. porosa* Kuthub. are superficially similar to *P. bicolorata* by producing 1-septate conidia, but these species are otherwise clearly distinguished from *P. bicolorata*. In *P. intermedia* (which has been isolated from decaying leaves of several plants in Brazil, Cuba, and Mexico; Gusmão et al. 2008) the conidia are shorter (14.5–19 µm long) with a slightly asymmetrical septum and the conidiophores are uniformly brown (Alcorn 1996; Rao & de Hoog 1986, as "*P. aurea*"). *Paliphora porosa* produces cylindrical to clavate conidia that are usually 1-septate (rarely 2–3-septate) and somewhat constricted at the septa and uniformly golden brown longer (200–280 µm) conidiophores with more septa (15–23-septate; Kuthubutheen 1987).

Key to *Paliphora* species

1. Conidia usually unicellular 2
   Conidia usually septate 3
2. Conidia cylindrical, straight or curved, 17–20 × 1–2 µm; conidiophores cylindrical below, inflated near the apex, verrucose, 13–19-septate, dark brown, 142–20 × 1–2 µm . . . . . *P. inflata*
   Conidia falcate, obtuse and widest at the apex, attenuating gradually to a narrow base, 6.5–9 × 1–1.5 µm; conidiophores cylindrical, smooth below, acute, verrucose toward the apex, 11–18(–23)-septate, evenly golden brown, 99–132 × 5.5–6.5 µm . . . . . *P. aurea*
3. Conidia 1-septate 4
   Conidia >1-septate 6
4. Conidiophores bicolored, golden brown below and dark reddish-brown at the four distal cells, ≤17-septate, smooth below, verruculose near the apex, 170–220 × 4–6 µm; conidia cylindrical to broad sub-acerose, obtuse at the apex, attenuated at the base, 18–23 × 2 µm . . . . . *P. bicolorata*
   Conidiophores not as above 5
5. Conidiophores evenly brown, cylindrical below, acute at the apex, 16–22-septate, smooth below, verrucose near the apex, 135–205 × 6–7 µm; conidia, cylindrical or fusoid, apex obtuse, base subacute or obconic, straight or slightly curved, asymmetrically septate, 14.5–19 × 2 µm . . . . . *P. intermedia*
   Conidiophores evenly golden brown, cylindrical below, acute at the apex, 15–23-septate, smooth below, verrucose near the apex, 200–280 × 5–9 µm; conidia, cylindrical to clavate, symmetrical, slightly constricted at the septa, apex obtuse, base acute, straight, 12–25 × 1–2.5 µm . . . . . *P. porosa*

6. Conidia 3–6-septate, elongate-fusiform or narrowly, sometimes slightly sigmoid, 40–70 × 2–3 µm; conidiophores cylindrical, apex rounded, brown, 20–63-septate, smooth, 170–540 ×4.5–5 µm ..... *P. curviapicis*

   Conidia 8–13-septate, cylindrical, apex obtuse, base obconic, straight or slightly curved, 50–65 × 2.5 µm; conidiophores cylindrical below, bulbous at the basal cell, apex acute, brown, ≤16-septate, smooth below, verrucose toward the apex, 85–210 × 6–7.5 µm ..... *P. multiseptata*

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